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ORGANIZATIONAL RESILIENCE AND THE AIRLINE INDUSTRY: A QUALITATIVE STUDY

ÖRGÜTSEL DAYANIKLILIK VE HAVAYOLU ENDÜSTRİSİ: NİTEL BİR ÇALIŞMA

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Abstract

Airlines frequently experience several disruptive events that can substantially deviate operations from planned routines, resulting in significant losses. It's crucial for airlines to develop resources and consistently identify opportunities for adaptation to these unpredictable circumstances. Despite predetermined plans for specific situations exist, there is often a lack of policy-level guidelines for preparing for unknown circumstances— a concept known as resilience policy. This study delves into the constructs of resilience policy by drawing insights from 10 semi-structured interviews conducted with executives from 6 airline companies in Turkey. The findings pinpoint seven key criteria that offer a roadmap for effective policy development: financial management, flexibility and adaptability, effective risk management, strong leadership and culture, talent management, robust IT infrastructure, and collaborative partnerships. These criteria collectively provide a roadmap for developing policies that enhance an airline's ability to manage unexpected disruptions efficiently.

Keywords: Organizational resilience, aviation industry, organizational resilience policy

JEL Classification: L52, L93, L1, M1

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Öz

Havayolu şirketleri planlanmış rutin operasyonlarından önemli ölçüde sapmalara neden olabilecek birçok olayla karşılaşabilmekte ve bu da ciddi maddi kayıplara yol açmaktadır. Bu nedenle, havayolu şirketlerinin bu öngörülemeyen koşullara dirençli olabilmeleri için gerekli kaynakları geliştirmeleri ve hızla iyileşip normal işleyişe dönebilme kabiliyetleri kritik önem taşımaktadır. Havacılık sektöründe özellikle emniyete ilişkin öngörülebilir olumsuz durumlara yönelik önceden belirlenmiş planlar sıklıkla mevcut olmasına rağmen, bilinmeyen durumlar karşısında hazırlıklı ve dirençli olmak için gerekli olan politika düzeyinde yönergelerin eksik olduğu görülmektedir. Bu durum, dayanıklılık politikasının önemini ortaya koymaktadır. Bu çalışma, Türkiye'deki 6 havayolu şirketinin üst düzey yöneticileriyle gerçekleştirilen 10 yarı yapılandırılmış görüşmeden elde edilen bilgilerle havayolu şirketlerinin örgütsel dayanıklılık politikasının bileşenlerini derinlemesine incelemektedir. Başarılı bir örgütsel dayanıklılık politikası geliştirmek için yedi temel kriteri belirlenmiştir: finansal yönetim, esneklik ve uyarlanabilirlik, etkili risk yönetimi, güçlü liderlik ve kültür, yetenek yönetimi, sağlam bilişim sistemleri altyapısı ve işbirlikçi ortaklıklar. Bu kriterler, havayolu şirketlerinin beklenmedik aksaklıkları etkin bir şekilde yönetme yeteneğini geliştiren bir örgütsel dayanıklılık politikası oluşturmak için bir rehber sağlamayı amaçlamaktadır.

Anahtar Kelimeler: Örgütsel dayanıklılık, havacılık sektörü, örgütsel dayanıklılık politikası

JEL Sınıflandırılması: L52, L93, L1, M1

1. Introduction

The aviation industry is unique with its extreme sensitivity to political, economic, and natural disasters (O'Connell and Williams, 2011). The industry balances two distinct characteristic features: it is one of the most capital-intensive industries and is highly regulated by international and national authorities (Chattopadhyay, 2015). In addition to these complexities, airlines experience various disruptive events such as equipment failure, bad weather conditions, accidents, crew scheduling problems, terrorism-related events, or IT system failures, which can cause their operations to deviate significantly from planned routines. This variety and the associated unpredictable circumstances can further complicate the problem, resulting in substantial losses (Janić, 2015). Hence, it is particularly important to adapt and respond effectively to changes, challenges, and disruptions while maintaining its operations and strategic objectives, which is described as resilience.

Organizational resilience is the capability to continuously develop resources and identify opportunities, not only in case of adverse events but also in regular times to be prepared for potential disruptions (Lengnick-Hall et al., 2011; Lee et al., 2017; Van der Vegt et al., 2015). In the aviation industry, safety management systems and related procedures are designed to prevent accidents, incidents, and other safety-related issues or to minimize their impact should they occur. However, there is a lack of information and guidelines on how to prepare for unknown scenarios. The resilience policy, however, focuses on an organization's ability to respond to unexpected events and disruptions. Hence, airlines must establish principles for building continuous resilience, which can be summarized within the resilience policy.

Airlines' organizational resilience requirements might be different and more complicated than other industries due to their unique and challenging features, and there are only limited studies on the resilience of airline companies. These have focused mainly on air traffic and network resilience (e.g.,

Cook, et al., 2016; Wang et al., 2022; Wong et al., 2020), or only on single events such as the 9/11 terrorist attacks or the Covid-19 pandemic (e.g., Belhadi et al., 2021; Gittel, 2006; Kiraci et al., 2022). Resilience goes beyond just managing crises or networks. It is related to more profound subjects, including the culture and management style of an organization (Bradley and Alamo-Postrana, 2022), and should possess universality that can be applied to policy-making at a broader level. Then, none of the studies on resilience in aviation have used a qualitative method to get more in-depth knowledge of the concept and its state-of-the-art realization in the aviation industry. Hence, there is a gap for comprehensive qualitative research with a holistic view of the resilience literature covering all distinct aspects of airline organizations to guide effective policy development.

This study aims to gain a comprehensive understanding of how airline managers approach resilience without focusing on a specific incident or event. While there is some awareness of the challenges within the aviation industry, there exists a gap in comprehensive guides that detail the creation of practical, actionable policies for airlines, which provides the basis for the following research question:

> RQ: What are the constructs of policy development that enhance resilience within airline organizations?

As a result, this study identifies crucial constructs and offers a pragmatic guide for policy development to enhance resilience within airline organizations. It supports incremental policy design that can leverage existing practices and incorporate rational assessments (Howlett, 2019). While the essential objective of this study is to identify the essential constructs that airlines must adhere to establish and sustain organizational resilience, the secondary managerial objective is to deliver a practical guide for airlines to develop policies based on these constructs.

Consequently, the structure of the paper is as follows: First, resilience is defined through a comprehensive literature review. Subsequently, a focused examination of aviation-related resilience literature provides the foundation for the interviews conducted. Following this, the qualitative methodology applied is detailed. Lastly, the findings are reported and discussed.

2. Literature Review

The term "resilience" originates from the Latin word "resilire," which means to jump or bounce back. Holling (1973) was the first person to use the term referring to ecological resilience among living organisms. The concept has then been used across a range of disciplines (e.g., Caza et al., 2020; Schwarz, 2018; Wied et al., 2020). Different disciplines and fields have given different definitions of resilience (Bhamra et al., 2011). At the core of all these definitions, resilience is related to the capacity and capability of an individual, organization, or system to restore normal functioning following an interruption (Wiig and Fahlbruch, 2019).

In organizational studies, early definitions of organizational resilience focused on the capability to recover swiftly following adverse events and return to normal functioning (e.g., Lengnick-Hall et

al., 2011). Contemporary viewpoints on organizational resilience have given a more comprehensive approach, highlighting both the proactive and reactive capabilities of the organizations. Accordingly, resilience requires continuously developing resources and identifying opportunities not only during an adverse event but also in regular times (Lee et al., 2013; Lengnick-Hall et al., 2011; Linnenluecke, 2017; van der Vegt et al., 2015).

Boin and van Eeten (2013) distinguished between two forms of organizational resilience: (i) precursor resilience and (ii) recovery resilience. Precursor resilience prevents minor problems that signal early warnings before becoming more significant crises. Precipant resilience is especially critical for high-reliability organizations (Gould, 2019). Such organizations operate in high-risk environments where even minor mistakes can have significant consequences (e.g., air traffic control systems and airlines). In contrast, recovery resilience refers to the capability to respond to events and swiftly return to normal conditions after significantly larger events (Boin and van Eeten, 2013).

Duchek (2020) suggested three successive phases of the organizational resilience process: (i) anticipation, (ii) coping, and (iii) adaptation. Anticipation involves the ability to detect crucial changes and potential threats inside and outside the organization and develop the necessary resources to be prepared. Coping is intricately connected to crisis management and the precise and quick implementation of solutions. Adaptation includes organizational learning and change (Duchek, 2020).

Fiksel (2003) defined requirements for organizational resilience in four groups: (i) diversity, (ii) efficiency, (iii) adaptability, and (iv) cohesion. Diversity includes having diverse business strategies; efficiency includes resource efficiency and efficient decision processes; adaptability is about organizational learning and the capability to adjust to novel situations; and cohesion is about having a unique corporate culture and strong partnership. According to Lengnick-Hall et al. (2011), flexibility, agility, adaptability, and improvisation are the common organizational resilience factors.

Ma et al. (2018) defined organizational resilience through three dimensions: cognitive, behavioral, and contextual. Cognitive resilience emphasizes an organization's ability to perceive and interpret changes, underscored by a sense of purpose, core values, and vision. Behavioral resilience involves learned resourcefulness and agility, focusing on established routines and behaviors that adapt to disruptions. Contextual resilience relies on the strength of interpersonal connections and resources, enabling quick action in unforeseen situations.

Several studies emphasized the role of human resources in resilience, highlighting the importance of internal capabilities and the value of social capital and relationships as key resources in building a resilient organization. Siebert (2009) outlined a framework for building organizational resilience at the individual level, emphasizing five key steps: optimizing employee health and well-being, developing problem-solving skills, fostering strong internal gatekeepers, enhancing coping skills, and recognizing talents for serendipity. The framework suggested that resilience is not just about how organizations respond to challenges but also about how they proactively cultivate the capabilities of their workforce. Similarly, Lengnick-Hall et al. (2011) suggested that organizational resilience can be

fostered by strategically managing human resources to enhance individual competencies, through a HR system, principles, and policies. Bardoel et al. (2014) identified eight HR management practices, including social support, flexible work arrangements, and diversity management, aimed at boosting employee resilience and, by extension, organizational resilience. The study by Gerçek and Börekçi (2021) explored the role of HR management practices in building organizational resilience capacity, focusing on both operational and relational aspects. The research identified recruitment and selection practices as well as training and development practices as key factors positively impacting operational resilience capacity.

Ponis and Koronis (2012) delved into the foundational elements of organizational resilience within the supply chain, suggesting that the adaptability and robustness of the supply chain are crucial for the resilience of the organization. Christopher and Peck (2004) contributed to this discourse by establishing a framework for understanding what constitutes a resilient supply chain, emphasizing the need for flexibility, visibility, and collaboration among supply chain partners.

Borekci et al. (2018) emphasized the significance of both relational and operational resilience as complementary constructs that contribute to an organization's ability to survive and thrive in both short-term crises and long-term sustainability. Relational resilience emphasizes the importance of maintaining and nurturing relationships within and outside the organization, including networks and partnerships, to ensure survival and foster sustainability. Operational resilience, on the other hand, focuses on the internal processes, strategies, and capabilities that enable an organization to efficiently respond to and recover from disruptions, thereby ensuring continuity and adaptability in the face of challenges. They highlighted the importance of maintaining organizational and inter-organizational relationships for survival and leveraging these relationships, along with operational strategies, for organizational sustainability.

Resilience is an essential concept for organizations, as evidenced by abundant research and growing interest. It is a desirable trait that organizations must have to cope with various challenges (Linnenluecke, 2017). Resilience allows organizations to respond quickly to changing industry demand and customer preferences and provides a competitive advantage (Lee et al., 2013). In addition, organizational resilience improves organizations' operational performance (Akgün and Keskin, 2014). Besides, by enabling people to cope with challenges effectively, organizational resilience enhances the job satisfaction of employees and, consequently, their performance (Lampel et al., 2014). Considering all of this, it is crucial for companies and their business performances to comprehend the concept of resilience and apply it correctly.

Most aviation resilience studies primarily focus on air traffic and network resilience, which refers to the network's ability to continue safe operations during disruptions (e.g., Blom and Bouarfa, 2016; Cook et al., 2016; Janić, 2015; Wang et al., 2022; Wong et al., 2020). Gould (2019) stressed the importance of precursor resilience for airlines, including extensive procedural systems for managing risk. Other studies highlighted crew resilience (e.g., Douglas and Pittenger, 2020; Dekker et al., 2016). Some studies including Gittel (2006), have focused on specific disruptions, emphasizing the role of

solid employee relationships, commitment, and productivity in enhancing organizational resilience in the aftermath of the 9/11 attacks. The study also highlighted the crucial role airlines' financial reserves, especially cash flow and low debt levels, play in effectively responding to crises. Belhadi et al. (2021) explored airlines' supply chain resilience during the COVID-19 pandemic, while Kiraci et al. (2022) found that financial factors were vital to survive during COVID-19, with operational capabilities (e.g., flexibility in operations, schedule flexibility) being the second crucial factor in resilience.

Policy can be broadly defined as the outcome of various influential factors that establish guidelines and constraints for necessary actions (Hill, 1997) and serve as a fundamental basis for strategic management (Wheelen et al., 2017). Accordingly, organizations must establish policies outlining the fundamental form of behaviour to assure generalizability. There, resilience policy has become a crucial focus for organizations in response to the increasing frequency and severity of disasters and crises. It refers to a range of actions, measures, and strategies that organizations undertake to enhance their capacity to endure and recover from adverse events (MacKinnon and Derickson, 2013). Over time, resilience policies have shifted from being solely focused on responding to external threats towards a more comprehensive approach that aims to build resilience at all levels of the organization, including employee training and well-being, business model innovation and supply chain redesign, and collaboration (Linnenluecke, 2017). In short, policy development needs to encompass the entire value chain (Miroudot, 2020).

Implementing a resilience policy in aviation is crucial for preparing for and mitigating disruptions in an industry susceptible to unforeseen events (Carroll and Malmquist, 2022). These policies significantly impact the industry's ability to maintain operational continuity (Tanner et al., 2017; Tisdall et al., 2021). They enable organizations to respond swiftly to such situations and minimize the impact on customers, employees, and the business. While airlines have safety management policies to prevent accidents and incidents, resilience policies go further by addressing an organization's ability to handle unexpected events and disruptions. These policies also aid organizations in continuously developing resources and identifying opportunities, not just during adverse events but also in normal times (Lengnick-Hall et al., 2011; Linnenluecke, 2017). Thus, a resilience policy complements a safety management policy by offering guidance to managers at all levels, empowering them to make informed decisions and take necessary actions when needed (Wheelen et al., 2017). While it has many benefits, it's important to note that designing a resilience policy is a complex process. It requires a meticulous analysis of desired outcomes and available policy instruments, ensuring their alignment to achieve the intended results (Howlett, 2019).

3. Methodology

This research aims to identify the main constructs of organizational resilience in the airline business. The following questions are aimed to be answered:

What actions are taken by airlines to build and maintain organizational resilience?

Which resources, structures, or processes are essential for organizational resilience?

Ultimately, the study seeks to stress the significance of a resilience policy in enabling airlines to maintain their resilience and offer guidance on developing such a policy.

3.1. The Sample

The Turkish airline sector was reviewed for several reasons. First, Turkey's economy and population have experienced rapid growth, resulting in increased domestic and international travel (Aksoy and Karakayali, 2018). Second, Turkey's strategic location at the crossroads of Europe and Asia has made it a major hub for air travel (Dursun et al., 2014). Third, the Turkish government has been actively encouraging the growth of the country's airline industry through the liberalization of the sector and the development of infrastructure (Erdem and Ozturk, 2017). Fourth, the Turkish aviation sector offers a diverse range of business models. Seven passenger airlines are actively operating: THY and its affiliate Anadolujet, SunExpress, Pegasus, Tailwind, Corendon, and Freebird. Two of them are charter carriers, two are full-service carriers, and one is a low-cost carrier. Finally, several events have negatively affected the aviation industry recently in Turkey, which makes this sector a good sample for resilience research. These events include an economic downturn, terrorist attacks, proximity to the parties involved in the Ukraine and Russia War, devaluation of the Turkish Lira, political tension with various countries, and the COVID-19 outbreak. The seven airlines mentioned above have survived the challenging years, making them an interesting topic for investigation. The sample, consisting of participants from multiple airlines with different business models and serving in Turkey, which has a wide air network with diverse risk factors, was found sufficient to fulfill the research's objectives and ensure its generalizability.

This study employed convenience sampling and conducted ten semi-structured interviews with C – and S-level executives from six distinct airline companies. Participants were selected based on criteria that included holding C-level or S-level positions with strategic roles within the organization and possessing a tenure of more than ten years. Participants were reached via LinkedIn, a professional networking site, using contact details made public by their companies. Ethical approval was obtained from the university's ethics board, with which the authors were affiliated. All interviews were conducted on Zoom and recorded with participant consent. The interviews were then transcribed into a Word document. During the interviews, Participants discussed their resilience-building efforts, the importance of resources, structures, and processes for resilience, and ways to enhance organizational resilience. The complete list of questions is in Appendix I. The interviews lasted 60-70 minutes on average and were conducted between May and August 2022. The titles of the participants can be found in Table I.

In light of the limited prior research and the undefined nature of relationships between variables in this specific topic and context, a qualitative approach was chosen. This method is particularly

suitable for gaining a deeper understanding of new or complex issues, as it allows for the exploration of experiences and perceptions in depth (Creswell, 2013). The lack of existing studies on this subject in this particular setting underscores the need for a qualitative inquiry to uncover insights and develop theories from the ground up. Qualitative research, characterized by the interpretation of non-numerical data, delves into human senses and subjectivity and is considered "essential and inevitable, adding extra dimensions and colors to enrich the corpus of findings" (Leung, 2015). Interviews serve as a powerful tool for generating rich data, allowing for the exploration of diverse perspectives (Kvale, 1996). The development of interview questions is shaped by a comprehensive analysis of existing literature, ensuring that the investigation is grounded in prior knowledge while seeking to expand upon it.

To ensure the quality of this research and mitigate potential biases, adherence to specific checklists, as recommended by Dixon-Woods et al. (2004), was maintained. This included a rigorous examination of all questions for clarity and the consistent application of an interview schema, promoting systematic transparency—a critical component in qualitative research (Meyrick, 2006). Furthermore, the diversity among interviewers in terms of gender, profession, and educational background contributes to the study's richness. The findings are thus considered valid within the specified context.

Table 1: Participants Titles

Participant	Title	Experience at current company	Total Industry Experience	Company business model
Participant 1	Chief Financial Officer, Deputy Managing Director	7 years	22 years	Charter
Participant 2	Chief Information Officer	6 years	10 years	LCC
Participant 3	Chief Operating Officer	9 years	30 years	LCC
Participant 4	Chief Financial Officer, Board Member	5 years	10 years	Charter
Participant 5	Senior Vice President Customer Solutions & Analytics	7 years	9 years	FSC
Participant 6	Chief Executive Officer	18 years	29 years	LCC
Participant 7	Senior Vice President Regional Flights	16 years	16 years	FSC
Participant 8	Chief Human Resource Officer	5 years	8 years	FSC
Participant 9	Chief Human Resource Officer	9 years	9 years	LCC
Participant 10	Chief Executive Officer	15 years	20 years	Charter

3.2. Data Analysis Approach

A thematic content analysis was then conducted to analyse the data. This analysis included both manual coding and the use of computer-assisted software, MAXQDA. While computer-assisted tools are beneficial for managing large datasets and providing objective coding, they may not detect synonyms or multiple-word meanings, sometimes requiring researcher judgment to develop themes. A manual approach allows for more meaningful engagement with the data (García-Horta and Guerra-Ramos, 2009; Maher et al., 2018; Mattimoe et al., 2021). Therefore, a combination of

computer-assisted and manual coding methods was employed. Both coding methods were used to systematically categorize qualitative data, identify similar meanings, and quantify phrases and words (Guest et al., 2012). This process led to the formation of larger categories, subthemes, and main themes (Boyatzis, 1998). All data was consolidated into a single text document during both analysis phases to facilitate this process. Similar responses were grouped by topic and systematically categorized. The principle of triangulation was implemented to enhance the robustness and validity of the findings. Through the involvement of multiple researchers in the review and discussion process, a variety of viewpoints and interpretations were accommodated. This collaborative effort ensured a comprehensive analysis of the data and fostered a richer understanding by integrating diverse perspectives (Creswell, 2013).

4. Results

All participants agreed that their companies lack a written policy on organizational resilience. They also mentioned that there is no designated budget or key performance indicators (KPIs) for assessing organizational resilience. Furthermore, participants noted that the industry's highly regulated nature plays a significant role in enhancing their resilience. Accordingly, the capital and operational regulations and standards imposed by the national and international authorities help airlines mitigate risks and enhance their ability to withstand disruptions. As explained by one participant:

> "*The General Directorate of Civil Aviation (DGCA) has financial requirements from airlines. It has the authority to suspend our operations in case of any problems in our capital structure. Apart from that, there are also operational requirements. Audits conducted by civil aviation authorities are important for safe and resilient operations. Because of aviation's national and international regulations, we don't need a separate resilience policy.*" (P1)

Although the industry's regulatory structure lies beyond the airlines' control, participants emphasized the vital factors they can control to enhance their resilience. The categories that emerged as a result of the analysis and the main issues that the participants stated as the must-have factors regarding the resilience of the organization were revealed. As a result, financial management, flexibility and adaptability, effective risk management, strong leadership and culture, talent management, robust IT infrastructure, and collaborative partnerships were revealed based on the answers (Figure 1), which are explained next.

As a notable exception, despite the recognition of state support as a significant factor, researchers have determined that this is not a resilience factor for organizations that continue to operate within the scope of the same regulatory authorities. Consequently, it has been excluded from the seven constructs.

Figure 1. Constructs of Airline Resilience Policy

4.1. Sound Financial Management

The theme that participants emphasized as the most crucial factor contributing to organizational resilience is "sound financial management." Participants have given different examples of what being financially strong means based on their experiences. Two have highlighted the importance of cash flow management, including cost-cutting and revenue-increasing measures, and one has stressed the importance of fleet financing on cash management. He recommended having an optimal mix of leased and owned aircraft to benefit from the advantages of each option, taking into account that the different acquisition options may offer varying benefits to airlines based on the coverage of the crisis, whether regional or global. In other words, this strategy advocates for a flexible financial management structure, enabling more effective navigation through financial uncertainties. Another participant emphasized the significance of implementing a performance-based wage system for enhancing resilience. The participant pointed out that instead of offering fixed salaries, this system could increase employees' productivity and alleviate the burden of paying high fixed salaries during challenging times. Lastly, two participants have highlighted the importance of hedging transactions to protect the company against volatile fuel prices and exchange rates, which require sound financial management skills and strength.

4.2. Flexibility and Adaptability

Another significant theme that emerged from the participants' responses as a contributor to organizational resilience is the importance of "flexibility and adaptability." This theme involved

business model flexibility, diversifying the customer market, and conducting scenario-based planning. Five participants have discussed the importance of spreading risk by adopting different operation types. Two have explained:

> "*A hybrid airline offering both scheduled and charter flights can turn some of their scheduled operations to charter during the peak season. The company would not have this flexibility by sticking only to the charter. Because charter airlines are usually small and cannot offer enough network for connecting passengers.*" (P10)

> "*During the pandemic, passenger transportation decreased, but cargo demand increased. We converted our passenger aircraft to cargo aircraft and did cargo operations. We had been investing in cargo operations for 4-5 years, so this was our advantage.*" (P5)

In addition, one participant has highlighted the importance of diversifying the customer market and not sticking to a single region. He explained:

> "*The political problems between the airline's home country and the served country may disrupt the business. An example is a war between Ukraine and Russia, affecting the tourists coming from these regions to Turkey. Therefore, diversifying the market is important.*" (P4)

Similarly, another participant has stated:

> "*We derive a significant portion of our revenues from three countries: Germany, Austria, and Switzerland. If there is political tension between Turkey and these countries, it can affect our business. Differentiating our markets and diversifying our source markets will increase our resilience.*" (P8)

4.3. Effective Risk Management

The next theme contributing to organizational resilience is "effective risk management." The theme involved emergency preparation and disruption management. The participants have identified several key items for emergency planning, including establishing a crisis committee, developing policies and manuals for emergency action plans, and conducting realistic drills to ensure preparedness. As explained by one participant:

> "*We have emergency plans. In case of an accident or emergency, there are written policies involving a description of who will do what and when. Rehearsals are also done once or twice a year in order to gain practice.*" (P4)

In addition, two participants have stressed the importance of backing up essential roles for resilience. They have recommended that the system should not depend on individuals, and everyone, especially the critical position holders, should have a backup person.

Five participants highlighted that readiness for future operational disruptions is essential for resilience. As explained by one of them:

> "*We have a risk management board. All potential disruptions and risks are evaluated at the board level, e.g., exchange rate fluctuations, terrorism, adverse weather conditions, bird strike, lightning strikes etc. All departments participate. It is reviewed quarterly, and actions are taken.*" (P2)

Another participant has explained the importance of training and practice in managing disruptions:

> "*For managing operational disruptions, training is a must. All personnel must be trained for potential disruptions, and drills must be conducted for practical experience.*" (P5)

Many participants believe that having written corporate policies is essential to be operationally and financially resilient. One participant has stressed the benefit of having written procedures for disruptions:

> "*Organizational resilience depends on how well you set up and define your processes. We may encounter several difficulties and disruptions. They all have to be defined in the procedure. Otherwise, it is not possible to manage them. For example, if a plane cannot land and divert, there should be predefined procedures and processes for transporting the passengers to their destination by other means. We have extensive disruption management procedures covering all types of disruptions.*" (P5)

Another one explained the importance of having written policies, procedures, and rules to reduce the likelihood of inconsistencies that could lead to risk:

> "*We have written policies, and we follow them strictly. For instance, we collect all the revenues before the aircraft takes off. Thomas Cook was one of our biggest customers. One day, they wanted to make their payments 15-20 days after the operation. We did not accept it. It was company policy. Because of this, we were the only company in the world that did not lose money to Thomas Cook, which went bankrupt soon after.*" (P4)

Three participants have highlighted the importance of scenario-based planning for organizational resilience. As stated by one of them:

> "*Every quarter, commercial strategies are reviewed to see if they are right and if there is room for improvement. Scenarios are constantly updated. For instance, when the Euro*

gains value against the Turkish Lira, Turkey becomes cheaper for tourists. In this case, the company may consider increasing inbound international flights and decreasing domestic flights. Or, if there is a bomb explosion or a terrorist attack in Turkey, the company would consider decreasing international traffic and increasing domestic flights." (P6)

Lastly, one participant highlighted employee management flexibility, which requires HR to develop future scenarios for personnel planning. As explained by one participant:

"We do scenario planning to mitigate potential risks. For instance, if a competitor is recruiting flight crew, we anticipate the possibility of a shortage of first officers and devise a plan to address it, such as planning Captains-only flights. We explore alternative solutions, such as recruiting experienced pilots from abroad. Similarly, we established partnerships with flight schools to cultivate and train our pilots." (P9)

4.4. Strong Leadership and Culture

The next important theme for organizational resilience is "strong leadership and inclusive culture." The theme included transparent and frequent information exchange between top management and employees, creating an inclusive culture that would increase employee commitment and, consequently, organizational resilience.

The pandemic was especially an exceptional period where top management communication became essential. As explained by a participant:

"I believe that being a transparent leader increases resilience. We frequently hold live meetings online and keep the employees informed. We hold town hall meetings every three months. We convey the company results to our employees. Our employees ask questions, and we answer them. We conducted pulse surveys and asked personnel to evaluate senior management, personal rights, working conditions, etc." (P8)

Three participants emphasized the importance of creating an inclusive culture. As stated by one of them:

"We encourage a culture of free discussion. We attach importance to people expressing their opinions and creating a comfortable atmosphere." (P3)

Lastly, five participants have mentioned that improving employees' commitment to the company is vital for a resilient company, especially during a crisis. An example quote is given below:

"A key strength of ours is our dedicated and seasoned staff, who made significant sacrifices during the pandemic. This period highlighted their loyalty, which has been a positive force in bolstering our resilience." (P7)

4.5. Talent Management

The findings have also revealed that "talent management" is vital for organizational resilience. Talent management involves having healthy and objective recruitment and performance appraisal programs, attracting diverse talents, and investing in employees. One participant has stated that having an independent and healthy hiring system is critical for organizational resilience and explained it as follows:

"*We have an independent and healthy recruitment system. Independent psychologists attend the job interview, and if they do not give their consent, we do not hire that person.*" (P8)

In addition, the participant has also highlighted the importance of keeping the employee selection criteria tight:

"Having a rigorous selection process is vital for resilience because missing the right talent can be compromised against hiring the wrong person." (P9)

Moreover, two participants have emphasized the importance of performance measurement and improvement programs for resilience. The other two have highlighted the importance of attracting successful and talented employees and diversifying the workforce as critical for organizational resilience. Lastly, five participants have highlighted the importance of investing in employees to improve companies' resilience. This investment covers providing training, supporting their advancement, and maintaining a work-life balance. The example quotes are as follows:

"We prioritize staff training and have established a dedicated academy where we offer competency and coaching training. To foster organizational resilience, it's essential to build resilience within our personnel. Investing in their resilience is crucial for sustaining it." (P6)

"Our greatest investment is in our employee-focused philosophy. Our goal is to become one of Turkey's top employers. We strive to make our employees feel valued and special at every point of their journey with us, from the moment they are hired until their final day." (P8)

Lastly, two participants stressed supporting employees psychologically during crises to improve their psychological resilience.

4.6. Robust IT Systems

Four participants have stressed the importance of having "robust IT systems" as critical for organizational resilience. One participant stated:

> "*IT resilience is very important. We have a disaster recovery backup centre for operational and internal business systems. We back up all our systems in case of a cyber-attack or if the systems are down. We also have procedures and plans to continue operations manually.*" (P2)

In addition, one participant stressed the importance of IT systems for managing disruptions. As explained by one participant:

> "*There will be many operational disruptions. The important thing is to be able to manage them. To do that, investment should be made in technology. It is like insurance; you do it now and see the benefit when that moment comes. If you do not invest in technology and cut budgets during crises, you may contribute to the company's one-year budget, but it has a long-term negative impact on the business.*" (P5)

4.7. Collaborative Partnerships

Some participants have highlighted the importance of "collaborative partnership" for organizational resilience. Among them, two have mentioned the support of partner companies. The others have stressed having good relations with companies in their supply chain. As stated by one participant:

"*For resilience, good relations with the supply chain companies are vital. We offer training to those in the supply chain, such as handling company personnel, call centre personnel, etc. We teach them the company rules and expectations for the guest experience.*" (P6)

A comprehensive table that includes all relevant participant quotes, organized by themes and subthemes, can be found in Appendix II. This table serves to provide a detailed overview of the data supporting the thematic analysis. Furthermore, a word frequency analysis was conducted using MaxQDA. The outcomes of this analysis are displayed in Figure 2, which highlights the most frequently used words that align with the identified themes. These words were selected based on a significant frequency ratio of 30%, underscoring their relevance to the study's core themes.
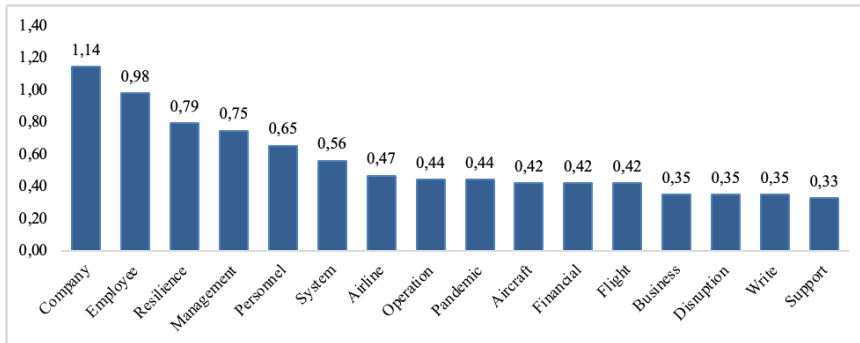
Figure 2: Frequency Analysis of Key Terms

5. Discussion of the Findings

Research underscores the efficacy of an incremental approach in policy development, where collected information serves as a critical guide for policy formulation (Howlett, 2019). Analysis of participant responses has illuminated several key dimensions that are recommended for inclusion in a resilience policy. These dimensions provide comprehensive guidelines for the development of such policies. It is advised to draft a policy document that clearly outlines the overarching goals, objectives, and strategies aimed at bolstering resilience. This structured approach can deliver a comprehensive perspective for resilience policy formulation, which can easily be converted into a scorecard to evaluate airlines as higher executive level parameters, incorporating specific criteria, and related performance indicators. The dimensions identified such as strong financial management, flexibility and adaptability, effective risk management, leadership and inclusive culture, talent management, robust IT systems, and collaborative partnerships can form the basis of assessing how well the concept of resilience permeates throughout an organization.

A financially stable airline is better equipped to weather unexpected events, such as sudden drops in demand or fuel price hikes. Therefore, a resilience policy should prioritize strong financial management and outline a framework for managing financial risks and disruptions. The policy should include procedures for managing cash flow, identifying alternative funding sources, assessing different scenarios, identifying revenue streams, diversifying investments, and determining hedging strategies.

Flexibility and adaptability are crucial factors contributing to airlines' organizational resilience. A resilience policy should include strategies for adapting to changing circumstances, such as business models and market diversification. The policy should also establish a process for regularly reviewing and updating the organization's strategic plan to remain relevant and responsive to changing

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circumstances. Incorporating scenario planning into a resilience policy also ensures a proactive approach to risk management.

Building resilience necessitates effectively identifying and managing both internal and external risks. Therefore, a resilience policy should involve comprehensive risk management, encompassing emergency preparation and disruption management. Emergency plans should encompass employee training, drills for potential crises, well-structured communication strategies, and evacuation and recovery protocols.

A key organizational resilience aspect is strong leadership and an inclusive culture. Transparent and frequent communication is essential to building organizational resilience as it enables leaders to share information, coordinate responses, and maintain employee morale and engagement. Consequently, a resilience policy should outline the organization's communication management approach, including crisis communication protocols and regular communication channels and processes.

Building resilience requires the active involvement of all employees, who are often the first responders in crises and are crucial to adapting to change. Engaged employees tend to demonstrate commitment to the organization's goals and values, take ownership of their work, and gain valuable insights, which is especially vital during disruptions. Therefore, a resilience policy should include specific initiatives and programs to foster employee engagement and cultivate a resilient culture. These initiatives may include conducting regular surveys to gather feedback and providing platforms for employees to express their thoughts.

Resilience necessitates a skilled workforce capable of adapting to change and steering the organization toward success. Thus, a resilience policy should outline talent management strategies, including specific initiatives to attract, retain, and develop a talented workforce. This may include creating a talent pipeline for critical roles, investing in training and development programs, and implementing objective recruitment and performance appraisal programs.

To maintain resilience, robust IT systems are critical as they guarantee business continuity in the presence of disruptions such as natural disasters, cyber-attacks, or other emergencies. The resilience policy should outline the organization's approach to IT systems, including specific initiatives and programs to ensure that systems are robust and reliable. This may involve implementing redundancy and backup systems, investing in security measures to protect against cyber threats, and developing plans and protocols to continue operations manually.

Incorporating collaborative partnerships into a resilience policy can enhance the use of strengths and resources, build trust and communication among various groups, and foster a more coordinated and effective response to disruptions. A policy geared towards collaborative partnerships might entail identifying and prioritizing essential partners according to their expertise and resources. It could also include guidelines for initiating and sustaining partnerships, such as crafting formal agreements and establishing protocols for communication and collaboration. Additionally, the policy may outline the roles and responsibilities of each partner during a crisis or disruptive event. As a final

recommendation, the airline should regularly review and update its resilience policy to stay relevant and effective.

To contextualize the findings of the study within the broader academic landscape, it is important to examine how they align with and diverge from established literature on this subject. Our findings on sound financial management align with the findings of previous studies by Gittel (2006) and Kiraci et al. (2022), which identified financial strength as a critical factor for surviving crises. The findings on sound financial management also underscore the operational aspect of resilience (Borekci et al., 2018). Effective cash flow management, fleet financing, and hedging transactions are operational strategies, resonating with Borekci et al.'s (2018) emphasis on operational resilience for sustaining organizational capabilities.

The flexibility and adaptability theme supports the behavioral aspect of resilience, showcasing the organization's ability to implement new routines and adapt its business model and operations in response to changing conditions (Ma et al., 2018). It exemplifies the organizational agility that is at the heart of behavioral resilience. The flexibility and adaptability theme also aligns with Borekci et al.'s (2018) discussion on operational resilience. The flexibility in business models, customer market diversification, and scenario-based planning reflect operational strategies that enhance an organization's adaptability and resilience, essential for both survival and long-term sustainability. Moreover, flexibility and adaptability are crucial factors contributing to airlines' organizational resilience, consistent with previous research emphasizing the importance of operational capabilities (Kiraci et al., 2022) and diverse business strategies (Fiksel, 2003).

The theme of effective risk management, with its focus on emergency preparation, disruption management, and the establishment of backup roles, reflects behavioral resilience dimension of Ma et al.'s (2018) framework. An effective risk management, including emergency preparation and disruption management, also closely align with Borekci et al.'s (2018) operational resilience. The focus on preparedness and the capability to manage disruptions contribute significantly to an organization's survival. As previous studies have confirmed, emergency planning enhances airlines' precursor resilience (Boin and van Eeten, 2013; Gould, 2019), allowing them to strengthen their resilience overall. Furthermore, efficient disruption management necessitates continuous monitoring, risk evaluation, and the development of procedures for various disruptions. The findings align with previous studies emphasizing the importance of emergency preparation and disruption management in the anticipation stage of organizational resilience (Duchek, 2020).

Strong leadership and an inclusive culture are critical for maintaining and nurturing organizational and inter-organizational relationships, which are pivotal for relational survival and sustainability. The emphasis on psychological support and employee commitment also reflects the significance of internal relational dynamics for resilience (Borekci et al., 2018). Our findings on strong leadership and inclusive culture also resonate with cognitive resilience dimension of Ma et al.'s (2018) framework. The emphasis on transparent communication, creating an inclusive culture, and psychological support during crises aligns with fostering a prepared collective mindset for resilience, as cognitive resilience

suggests. The findings also align with Siebert's (2009) proactive resilience framework. The focus on leadership and culture, especially evident during the pandemic, reflects Siebert's emphasis on employee well-being and coping skills. Transparent communication, inclusivity, and psychological support demonstrate how leadership and culture contribute to individual-level resilience.

The study's emphasis on talent management as a pivotal element for organizational resilience aligns with previous studies highlighting the importance of solid employee relationships for organizational resilience (Fiksel, 2003; Gittel, 2006). The critical importance of having a healthy and objective recruitment system, stringent employee selection criteria, and the necessity for performance measurement and improvement programs finds resonance with the HRM practices highlighted by Bardoel et al (2014). Additionally, the emphasis on attracting diverse talents and investing in employee development, including training, career advancement, and ensuring work-life balance, aligns with the strategic HRM framework for resilience outlined by Lengnick-Hall et al (2011). Moreover, our insights into talent management, including effective hiring, appraisals, and employee development, reflects Siebert's (2009) approach to enhancing problem-solving skills and recognizing individual talents. Talent management theme also supports both relational and operational resilience, enhancing internal relational resilience by fostering a committed and skilled workforce (Borekci et al., 2018). The emphasis on talent management in our study aligns with Gerçek and Börekçi's (2021) focus on the role of HRM practices in fostering resilience at the individual level. Both studies acknowledge the importance of nurturing a skilled and committed workforce, thereby highlighting the significance of human capital in enhancing organizational resilience. Lastly, effective talent management enhances cognitive and behavioral resilience proposed by Ma et al. (2018) by fostering a workforce capable of innovation and adaptability.

Robust IT systems are critical infrastructural elements that support all aspects of organizational resilience, from cognitive awareness of threats to behavioral responses and contextual networking (Ma et al., 2018). This theme underpins operational resilience by ensuring the organization's processes remain effective and efficient, even in disruptive conditions (Borekci, 2018).

Similar to the insights provided by Ponis and Koronis (2012) and Christopher and Peck (2004), our findings underscore the significance of supply chain resilience for organizational resilience. The findings also support Miroudot (2020), claiming that the value chain must be respected in the resilience policy.

The importance of collaborative partnerships highlighted in the study aligns with contextual resilience dimension as described by Ma et al. (2018). By emphasizing support from partner companies and good relations within the supply chain, our findings underline the significance of a prepared resource and social network, foundational to contextual resilience. Reflecting Borekci et al.'s (2018) relational resilience, the emphasis on collaborative partnerships underscores the value of external organizational relationships. The support from partner companies and strong supply chain relations are foundational for relational survival, contributing to the broader organizational resilience.

6. Conclusion

Organizational resilience is the ability to respond and adapt to unforeseen events. Nevertheless, resilience is not only about the responsive capabilities of an organization to a collection of predetermined cases but also needs generic strategic management perspectives outlined by policies. The aviation industry is particularly suited to a focus on resilience, given the potential for various complex, disruptive events to impact the industry significantly. Airlines must set their resilience policies to continue their operations in turbulent times. To the best of the authors' knowledge, there has been a lack of policy design research in aviation. Hence, the motivation behind this study stemmed from the necessity of establishing guidelines for formulating resilience policies within the airline industry.

Consequently, this work first aimed to uncover the critical components of organizational resilience in the airline industry, i.e., the constructs of organizational resilience in airlines to be leveraged for policy formulation. Interviews were conducted with C-level professionals to identify the perceptions as well as the current needs concerning resilience.

The data was gathered from 10 semi-structured interviews with top-level executives from 6 airline companies. The findings were grouped into seven themes that serve as key criteria for airlines to consider when developing their resilience policies. These included sound financial management, flexibility and adaptability, effective risk management, strong leadership and culture, talent management, robust IT infrastructure, and collaborative partnerships. It was shown that these are the main dimensions that must be respected in policy formulation for airline organizational resilience. Organizations can utilize the identified common practices as benchmarks and design their policies accordingly, considering these dimensions.

These constructs of resilience, as identified herein, are intended to serve both as foundational measurement criteria for future research and as a significant framework for organizations aiming to enhance their resilience. It is imperative that organizations consider these dimensions collectively, adopting a holistic approach that fosters among them, to navigate the challenges and uncertainties effectively.

The study has distinctive contributions to both practice and academia. It enriches the body of literature on resilience policy—a concept still in the early stages of exploration—by delving into its constructs and components within the specific context of the airline industry. Findings of the study can establish a foundational framework for future academic research on the development, implementation, and impact of resilience policies in diversified industries. Moreover, by employing a qualitative methodology, the study yields that are both grounded in real-world experiences and instruappmental in refining theoretical constructs.

The findings of this study have significant implications for practitioners, policymakers, and the academic community alike. For practitioners in the airline industry, the identified themes serve as crucial criteria for developing resilience policies, guiding them in navigating uncertainties and disruptions effectively. Policymakers can leverage these insights to formulate robust policies that

support organizational resilience within the aviation industry. Moreover, for the academic community, this study enriches the literature on resilience policy by providing a foundational framework for future research in diverse industries.

As with many studies, this study also has limitations. One limitation of the study is relatively small sample size used in this research. A larger and more diverse sample could have provided additional depth and breadth to our analysis. Also, the sample incorporates members of upper management to provide enhanced strategic insights. Although upper management offers a strategic viewpoint, involving lower-level employees in future studies could unveil additional findings through their operational knowledge. Additionally, the reliance solely on interviews for data collection may have introduced biases or limitations. To mitigate these concerns, future research could consider employing a variety of data collection methods, such as focus groups or Delphi techniques. These approaches, along with larger sample sizes, could enhance the robustness and generalizability of the findings. Although this study provides guidance in identifying common themes related to resilience, measuring these themes and related elements is still lacking. Furthermore, the study focuses only on passenger transportation. Future studies can investigate whether there is a difference in organizational resilience in cargo and passenger transportation. Lastly, the study was conducted on the airline industry in Turkey. Considering the global positioning of the sample organizations, the results can be generalized. In addition, the Turkish aviation industry serves as an excellent example of a dynamic environment with a high number of variables affecting the business. In order to investigate the effect of culture on organizational resilience, a comparison can be made by including a different air network in the research.

Yazar Katkısı

KATKI ORANI	AÇIKLAMA	KATKIDA BULUNANLAR
Fikir veya Kavram	Araştırma fikrini veya hipotezini oluşturmak	Özge Yanıkoğlu, Sena Kılıç, Çağlar Üçler
Literatür Taraması	Çalışma için gerekli literatürü taramak	Özge Yanıkoğlu, Sena Kılıç,
Araştırma Tasarımı	Çalışmanın yöntemini, ölçeğini ve desenini tasarlamak	Özge Yanıkoğlu, Sena Kılıç, Çağlar Üçler
Veri Toplama ve İşleme	Verileri toplamak, düzenlemek ve raporlamak	Özge Yanıkoğlu, Sena Kılıç, Çağlar Üçler
Tartışma ve Yorum	Bulguların değerlendirilmesinde ve sonuçlandırılmasında sorumluluk almak	Özge Yanıkoğlu, Sena Kılıç, Çağlar Üçler

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Resume

Özge Yanıkoğlu (Assistant Prof.), she completed her undergraduate degree in 2007 at Istanbul University, Faculty of Business Administration. She earned her first Master's degree in Marketing at Bahçeşehir University in 2010. After submitting her thesis on the competitive strategies of Turkish airline companies, she started working at Onur Air as a Management Trainee. Over 2.5 years, she worked in various departments of the company, including ground operations, technical, and commercial units. With experience in banking, foreign trade, and aviation, she accumulated over five years of industry experience. In 2013, she obtained her second Master's degree in Air Transport Management from Cranfield University (UK), and in 2019, she earned a PhD in Management and Organization from Marmara University. Yanıkoğlu's research focuses on management, strategy, organizational behavior, and airline management. While continuing her academic career, Özge Yanıkoğlu remains actively involved in the aviation sector, aiming to integrate theory and practice and contribute to the advancement of Turkish Civil Aviation.

Sena Kılıç (Instructor), received her Bachelor's Degree in Aviation Management with honor from Ozyegin University/ Faculty of Aviation and Aeronautical Science in 2016. During her undergraduate education, she has been in TAV Operation Center at Istanbul Ataturk Airport as a trainee and also

attended courses in University of Information Technology and Management in Rzeszow, Poland with Student Exchange Program. Then, she completed her master's degree in Istanbul Technical University, Institute of Social Sciences, Department of Business Administration. She is currently a Ph.D. candidate at Yıldız Technical University.

Çağlar Üçler (Associate Prof.), graduated from the Technical University of Munich (TUM) with a combined degree of "Diplom Ingenieur" in Mechanical & Aerospace Engineering. During his study he worked as a research fellow in DASA Military Aircraft and TUM. Afterwards he joined CASE-M in Munich, where he took part in simulation projects related to Ariane Rockets. After coming back to Turkey, he has finished several CAE and engineering consulting projects in Aerospace & Defense, Automotive and Energy sectors, including but not limited to projects in FIGES, Aselsan, TAF, STM, TEI, Rolls Royce Marine, Blue Origin, Mercedes Benz Turk, Ford, Cummins Engine and UZEL. He has been the former Deputy General Manager of FIGES, where he also facilitated consulting & training in SASAD and TAYSAD member companies. During his work in FIGES he made his dissertation in Concurrent Engineering in Engineering Management at Marmara University. Then, he joined the ARITAS Group, where he founded the German Branch and worked on the management and restructuring of the existing engineering resources. He is currently faculty member in FAAS and continues his research in production management, particularly product development, technology management and innovation management. Furthermore, he is contributing proactively to several projects in Aerospace and Defense.

Appendix I – Interview Questions

1. Do you have a written policy on resilience?

2. Do you have specific processes for resilience?

3. Do you have a budget for resilience?

4. Do you have any preparation, plans etc., with respect to resilience?

5. Did you have any actions in the last 3 years with respect to resilience?

6. Could you please talk about potential threats for your business?

7. How does your organization manage potential threats?

8. How do you measure (or do you measure at all) resilience?

9. Which resources, structures, or processes are more important for resilience?

10. Do you evaluate resilience capabilities of employees?

Appendix II – Participant Quotes by Themes

	Sound Financial Management
General	To be resilient, airlines need to be financially strong. They must have adequate capital and successful financial management. (**Participant** 3)
	To have organizational resilience, we need to be financially resilient. (**Participant 6**)
	Retaining capital is a must for resilience because, without financial strength, we cannot operate. (**Participant 1**)
	Resilience requires financial strength. Financial resources are necessary to manage crises. (**Participant 7**)
	Financial management is the most crucial process for managing an airline. Airline management is directly proportional to financial management skills. Many issues can resolve when you are financially strong. (**Participant 4**)
Cost Management	We do cash management during a crisis by reducing expenses and increasing revenues. (**Participant 7**)
	We had a growth mindset until Covid. During the covid, our priority became cash management which is about balancing cost and revenue cash flows. We m"anaged to be resilient during the covid period thanks to it. (**Participant 6**)
	When I joined the company, the ratio of the fixed-wage was 93% whereas the variable wage was 7%. However, there is a serious seasonality in our business. The high season is from April to October, and the low season is from November to March. Especially in times of crisis, when a capacity reduction is required, having a high % of fixed fares would result in very high salary payments even when the personnel is not working. Considering this seasonality risk, we decided to change our model. We reduced the % of the fixed payment to 53% and increased the % of variable pay to 47%. The new wage model became a performance-oriented model. With this new model, we generated millions of savings. We have developed a resilience not only in the pandemic but also in the future crises. (**Participant 8**) We started a cost-management initiative. All departments, including operations, trade, finance, purchasing, and human resources (HR), are included. With this initiative, we saved 400 million Euros in 2021. (**Participant 8**)
Fleet Financing Flexibility	Fleet financing and flexibility are essential. It is about the % of aircraft owned or financed through financial or operating leases. When there is a regional crisis in a carrier's home country, an operational lease might bring more flexibility as the airline can quickly return the aircraft to the lessor if a capacity reduction is needed. In comparison, ownership or financial lease might be more advantageous if there is a global crisis, such as the Covid-19 pandemic. During the pandemic, 93% of airlines worldwide canceled or suspended domestic and international travel. And due to the airlines' high fixed cost structure, they needed cash in order to pay these costs. Airlines who have full ownership of or financially leased at least some part of fleet sold the aircraft in hand to get cash or used the aircraft as collateral to secure loans. (**Participant 3**)
Economies of Scale	We can supply as many wide-body aircraft as we want. This is related to company image and size. Our size gives us negotiation power because suppliers don't want to lose us. This is one of our strengths in being resilient. (**Participant 7**)

Financial Hedging	In order to protect ourselves, we do hedging transactions in financial markets for fuel-related purchases and sales. To do this, we need to be financially strong. Because we make commitments while making these transactions in the financial markets, that's why financial management is so important. (**Participant** 4)
	The training cost of the pilots is in Euro. We fixed these training at a certain rate and converted them to TL. (**Participant** 9)
Outsourcing	It is essential to take advantage of the service provider's economies of scale. Also, in case of a crisis, outsourcing provides us the flexibility of not paying for the service if we don't receive it. (**Participant 3**)
Partners & Strong Group Companies	We acquired a software company, and we tailored it to our needs. We thought about the costs and benefits and decided the cost is worth it. (**Participant 4**) We receive maintenance service from our sister company, a well-known Maintenance Repair Overhaul (MRO) company. They don't overcharge us and help us with the payments. We may make late payments if we need to. They also support us with technical supply. If I need an aircraft part urgently, my sister company searches for the best part for me, pays it, and brings it. It might have taken a lot of effort and money if I had tried to do it myself. (**Participant 4**)
	Our strong group companies support us financially by giving up or postponing our debts during challenging times. Aircraft lease and maintenance are our most significant cost items. And our shareholder has an aircraft lease company. We rent our aircraft from this partner. If there is any problem, we can postpone our payments. They provide us flexibility. Also, our shareholder has a Maintenance Repair overhaul (MRO) company. They also offer us payment flexibility. (**Participant 10**)
	Pandemic was an exceptional period, something we have not experienced before. Our planes did not fly for three months. Passengers demanded their money back, which we had already spent by then. Financial resources are necessary to manage these situations. We are lucky in that sense because the economic situation of our partnership is good. (**Participant 7**)
Government Support	During pandemic, we benefited from a short-term working allowance provided by the state. (**Participant 9**, **Participant 1**, **Participant 8**, **Participant 5**, **Participant 7**)
Flexibility and Adaptability	

Business Model Flexibility	In the past charter operations used to represent a significant part of many airlines' operations. After the bankruptcy of large tour operators, trust in tour operators has decreased worldwide. Also, because of the increasing use of technology and an increasing number of online travel agencies (OTAs), people started creating their own tour packages. As a result, demand for tour operators and the charter business decreased, and moving from charter to scheduled operations became necessary for many airlines. (**Participant 1**)
	We did small-scale cargo operations to increase revenue during the pandemic. (**Participant 8**)
	We have a seasonal and fragile business. We are the backbone of Turkish tourism. Our winter incomes are very low. When an extraordinary situation affects the tourism sector, we face a serious threat. Also, we derive a significant portion of our revenues from three countries: Germany, Austria, and Switzerland. If there is political tension between Turkey and these countries, it can affect our business. In the future, differentiating our markets and diversifying our source markets will increase our resilience. (**Participant** 8)
	During the pandemic, passenger transportation decreased, but cargo demand increased. We converted our passenger aircraft to cargo aircraft and did cargo operations. We had been investing in cargo operations for 4-5 years, so this was our advantage. (**Participant 5**)
	The political problems between the airline's home country and the served country may disrupt the business. An example is a war between Ukraine and Russia, affecting the tourists coming from these regions to Turkey. Therefore, diversifying the market is important. (**Participant 4**)
	A hybrid airline offering both scheduled and charter flights can turn some of their scheduled operations to charter during the peak season. At the end of the peak season, they can use the same capacity in the scheduled market again. By sticking only to charter, the company would not have this flexibility. Because charter airlines are usually small in size and cannot offer enough network for connecting passengers. They can only offer point-to-point flights. In fact, in a typical flight, the % of passengers traveling from point to point is about 40%, and the rest connects to other destinations. (**Participant 10**)
	When I joined the company about 6 years ago, the rate of charter revenues was 90%. Now, it has decreased to 15%. The market changed. The number of tour operators is decreasing. Also, tour operators don't want to buy the whole aircraft; they want 20 seats let's say only for every flight. Because they reduced their capacity. We cannot rely on tour operators. With the bankruptcy of Thomas Cook, we lost money. Therefore, it is necessary to divide the risk. The advancement of technology, recent bankruptcies of tour operators, and the possibility of people making packages cheaper themselves have weakened this tour operator business in the world. Some remained in Scandinavia and a bit in Europe – but that's something the old population prefers only. Thus, we are moving towards scheduled. (**Participant 1**)
Dynamic Network Management	During the pandemic, countries imposed flight restrictions momentarily, and when the restriction decision came, we had to take that aircraft and use it in another market, which requires serious operational capability and dynamic network management. Moreover, predicting when the pandemic would subside in which countries was difficult. We couldn't use any historical data and had to move on with completely new methods. Our revenue management and network planning teams worked closely by using good forecasting algorithms to achieve network optimization. (**Participant 5**)
Effective Risk Management	

Emergency Preparation	We have committees and a crisis desk. Everything is predefined in case of an emergency, who will do what is clearly defined. We have manuals also. (**Participant 7**)
	We have emergency plans. In case of an accident or emergency, there are written policies involving a description of who will do what and when. Rehearsals are also done once or twice a year in order to gain practice. Our safety quality department usually carries out studies related to this business continuity. (**Participant 4**)
	We have emergency action plans. (**Participant 8**)
	We have family support teams that support both staff and accident survivors in emergencies. (**Participant 9**)
	Our safety directorate conducts realistic accident drills. We have predetermined family assistance teams to help victims in the event of an accident. We study scenarios such as if one passenger's leg is broken and if another one's ear is injured, we'll take the first one to hospital A and the other one to hospital B. This employee from HR will accompany the passenger who goes to hospital B, and she will meet her needs. Everything is predefined and simulated, from what to tell the press, who would go to the airport, who would go to the hospital, who would organize the doctor, who will call the lawyer, etc. These drills are held twice a year. We make them as realistic as possible. (**Participant** 2)
Disruption Management	We have procedures written for different types of operational distractions: e.g., adverse weather conditions. (**Participant 2**) We have a risk management board. All potential disruptions and risks are evaluated at the board level, e.g., exchange rate fluctuations, terrorism, adverse weather conditions, bird strike, and lightning strikes. All departments participate. It is reviewed quarterly, and actions are taken. (**Participant 2**) We have regular operational review meetings every week to discuss and analyze delays, cancellations, and the reasons. (**Participant** 2).
	We make serious risk management. All risks are covered at the board level. We talk about the actions we take and review them quarterly. (**Participant 6**)
	We have weekly operational meetings. Delays and root causes that occur are examined. People from all parts participate. (**Participant 3**)
	Organizational resilience depends on how well you set up your processes. We may encounter several difficulties and disruptions. They all have to be defined in the procedure. Otherwise, it is not possible to manage them. For example, if a plane cannot land and divert, there should be predefined procedures and processes for transporting the passengers to their destination by other means. We have extensive disruption management procedures covering all types of disruptions (**Participant 5**) For managing operational disruptions, training is a must. All personnel must be trained on potential disruptions, and drills must be conducted for practical experience. Otherwise, it is impossible to have a smooth operation in a business with so many disruptions. (**Participant 5**) We have systems that calculate how many passengers will be impacted in the event of a disruption, how they will be affected, and how can we re-accommodate them (i.e., systems that transfer the passenger you can no longer carry on this plane to the next flight or systems that provide passengers that we cannot accommodate open-ended tickets to use in different flights). All these systems are integrated. Your flight may change, or there can be flight disruption. What matters is to automate the processes as much as possible. (**Participant** 5)

Scenario-Based Planning	Every quarter, commercial strategies are reviewed to see if they are right and if there is room for improvement. Scenario analyses are conducted together with the finance, commerce, and operations departments. Commerce prepares projections on revenue generation; finance assigns expenses, operation arranges the required personnel numbers, etc. Scenarios are constantly updated. For instance, when Euro gains value against the Turkish Lira, Turkey becomes cheaper for tourists. In this case, the company may consider increasing inbound international flights and decreasing domestic flights. Also, if Covid had continued, the company would reduce inbound international traffic and increase transit and domestic flights. Or, if there is a bomb explosion or a terrorist attack in Turkey, the company would consider decreasing international traffic and increasing domestic flights. We do practice with these scenarios and improve our resilience. (**Participant 6**) For every decision regarding the future of the company, we discuss different scenarios E.g., When ordering aircraft, we evaluate different scenarios and finance options. (**Participant 6**)
	We made scenarios about how soon we can compensate the devastating effects of the pandemic. We had three scenarios: worse, moderate, and best. In the best scenario, we saw that it would take three years for us to be able to fully replace our capital and bring it to pre-Covid levels. (**Participant 1**) We are making scenarios about operating income and expense. (**Participant 1**)
	We do scenario planning to mitigate potential risks. For instance, if a competitor is recruiting flight crew, we anticipate the possibility of a shortage of first officers and devise a plan to address it, such as planning Captains-only flights. We explore alternative solutions, such as recruiting experienced pilots from abroad. Similarly, we established partnerships with flight schools to cultivate and train our pilots." These are some of the HR-related measures we take for organizational resilience. (**Participant 9**) We conduct FT programming. Captain and FO, and ground operation personnel requirements are planned. Scenario analyses are conducted, workloads are calculated. They are dynamically monitored and revised. If needed, we switch departments of employees. (**Participant 9**)

Written Policies, Procedures, and Rules	We try to make all applications institutional, not situational. We develop a norm, we make it a rule and we implement it. We are able to ensure fairness within the company. I adopt a philosophy of quality systems. Do what you write; write what you do. People can go, but systems will stay. Whatever I do, I write and turn it into politics. Even if something is done for the first time, if there is a probability of it repeating in the future, the company should turn that application or decision into a written procedure /rule. It'll then be implemented if it happens again. No system should be dependent on the employee or management. (**Participant 8**)
	We have written policies, and we follow them strictly. For instance, as a policy, we pay all aircraft-related costs to all relevant parties before the aircraft takes off. Likewise, we collect all the revenues before the aircraft takes off. Thomas Cook was one of our biggest customers. One day, they wanted to make their payments 15-20 days after the operation. We did not accept it. It was a company policy, and we did not change it. Because of this, we were the only company in the world that did not lose money to Thomas Cook, which went bankrupt soon after. (**Participant 4**) As a rule of our company, we don't allow a single customer (tour operator) to account for more than 50% of our revenue. We do not change this rule, even if we know we will lose potential revenue. We don't want to depend on that single customer because we cannot go against demands, which would negatively affect our resilience. (**Participant** 4)
Backup Important Roles	Backing up important roles and being able to step that person in quickly if something happens is valuable for resilience. Each role should have a backup. (**Participant 2**)
	It is important to be efficient in personnel number, but we should have backup persons. (**Participant 6**)
Strong Leadership and Culture	

Management Communication	Both HR and CEO are in regular communication with the employee. Transparent and frequent information exchange, internal communication portal where announcements and news are published. (**Participant 9**) We had webinars guiding employees on both psychological and physical issues of remote working during the Covid period. (**Participant** 9)
	During this pandemic process, we tried to keep the organizational resilience alive by communicating the processes to the employees in the most transparent and frequent way. We made regular meetings with employees explaining where the company stands, what future would bring, etc. (**Participant 1**) Transparent communication with our employees is very important for resilience. We tried to establish healthy communication during the pandemic. First, our CEO sent a message to employees. Then we communicated through the online system through questions and answers. We were trying to motivate employees by monthly sending them video messages, including photo collages from previous seasons. We also made updates every 3-4 months by stating our expectations. We were very honest about everything. (**Participant 1**)
	General managers, assistants, and managers' communication with the staff is very strong. (**Participant 7**)
	We try to build employee trust with communication. (**Participant 8**) I believe that being a transparent leader increases resilience. We frequently hold live meetings online and keep the employees informed. We hold town hall meetings every three months. We convey the company results to our employees. Our employees ask questions, and we answer them. We conducted pulse surveys and asked personnel to evaluate senior management, personal rights, working conditions, etc. (**Participant 8**)
	In terms of culture, the managers' doors are open to, our personnel do not hesitate to contact management. We have an environment where everyone can communicate with each other freely. (**Participant 4**)
	We encourage a culture of free discussion. We attach importance to people expressing their opinions and creating a comfortable atmosphere. That comfort then turns to creativity. (**Participant 3**)
	During the pandemic, the most important tool we had was communication and interaction with people, and we tried to use it. At management meetings, we shared information about the current situation and future of the company and the industry so that employees could see what was ahead. With open and transparent communication with employees, we tried to create the feeling that we are in the same boat and running towards the same goal. (**Participant 5**)

Employee Commitment	A key strength of ours is our dedicated and seasoned staff, who made significant sacrifices during the pandemic. This period highlighted their loyalty, which has been a positive force in bolstering our resilience." (Participant 7)
	Our employees are more committed to their companies than our competitors. They were very understanding and worked very hard to save the company. This was very important. (**Participant 5**)
	Employees' commitment to the company has a great contribution to organizational resilience. They didn't leave us. With the opening of the market, we were able to return to operation quickly. We would not have been able to achieve this if our personnel was not committed. (**Participant 1**) I have never seen another industry where the human factor is so prominent. It is a job that requires full affiliation. Aviation is not something a person who lacks commitment can do. (**Participant 1**)
	The more the employees embrace the company, the more the company is strong. They showed great sacrifice during the pandemic. They worked here very devotedly. They did not leave the company. (**Participant 10**)
	Our personnel turnover is below 2%. because of our employee-oriented HR system our personnel is loyal. (**Participant 8**)
Talent Management	
Investing in Employees	We offer several trainings to our personnel, including situational leadership, how to lead teams, how to communicate with the new generation, staff empowerment etc. (**Participant 9**)
	We prioritize staff training and have established a dedicated academy where we offer competency and coaching training. To foster organizational resilience, it's essential to build resilience within our personnel. Investing in their resilience is crucial for sustaining it. (**Participant 6**)
	It is highly important to invest in leadership with certificates and strengthen the management team to increase our resilience. (**Participant 8**) We have activated our diversity and inclusion policy. we subjected all women to women managers to leadership certification program at X University. (**Participant 8**) Our greatest investment is in our employee-focused philosophy. Our goal is to become one of Turkey's top employers. We strive to make our employees feel valued and special at every point of their journey with us, from the moment they are hired until their final day. (**Participant 8**)
	Investing in people takes you forward. If you are working at minimum in terms of personnel number, and if your employees are working overtime, there will be points where you cannot provide human support in case of any disruption. (**Participant 5**) We see employees as the company's greatest asset. We try to make them happy and to ensure that they were both mentally healthy and productive. (**Participant 5**)
	Our main asset is our employees. The more you choose these people correctly, the more you provide the necessary environment and conditions for these people to work correctly, better service they will give you. (**Participant 10**)

Psychological Support	We have peer-support groups. It is a platform where employees provide support to each other. (**Participant 8**) Employees received therapy from an independent institution to cope with the psychological effects of the pandemic. (**Participant 8**)
	We direct the employees who needed psychological support to the psychologists during this period. (**Participant 9**)
Objective and Rigorous Recruitment	We have an independent and healthy recruitment system. Independent psychologists attend the job interview, and if they don't give their consent, we don't hire that person. There is no conflict of interest between the company and the psychologists. They are completely independent. (**Participant 8**) Our recruitment filters are tight. Having a rigorous selection process is vital for resilience because missing the right talent can be compromised against hiring the wrong person. (**Participant 8**)
	It is extremely important to choose the right people and approach them in the most correct way. Employee is vital. Selection process is critical. We partnered with a company providing HR software. We define the selection criteria and the software help us to pick the right personnel for our company. (**Participant 1**0)
Performance Measurement & Improvement	We are assessing our personnel performance. Those with lower performance are subject to performance improvement programs. (**Participant 8**) We do 360 succession planning – a method to develop an individual's behaviour and performance. We also prepare employees for future management roles. (**Participan**t **8**)
	We are assessing our personnel performance. (**Participant 6**)
Attracting Talents	We need to be a pioneer on the HR side. We should attract new talent. (**Participant** 6)
	We need to strengthen our brand awareness as an employer to attract talents, diversify workforce from different universities. to increase our resilience. (**Participant 8**)
Robust IT Systems	

	IT resilience is very important. We have a disaster recovery backup center for all our systems (e.g., operational and internal business systems). We back up all our systems in case of a cyber-attack or if the systems are down. We also have procedures and plans to continue operations manually. (**Participant 2**)
	We should invest in technology more to catch up with the progress on the technology side faster. (**Participant** 6)
	Our IT infrastructure is a bit old. To strengthen our resilience. We need to improve it. (**Participant 7**)
	We have our own software company. We have a well-developed ERP system. These systems make us realize the malfunctions in our internal processes and force us to evolve (**Participant 10**) We partnered with a company providing HR software. We define the selection criteria, and the system tries to find the persons. This software help us to pick the right personnel for our company. (**Participant** 10)
	We are seeing the benefit of not stopping projects and investing in technology. (**Participant 5**) One of the main factors in managing the pandemic crisis has been our technological preparations. (**Participant 5**) Organizational resilience depends on how much you automate your work, and how well you set up your processes. (**Participant 5**) There will be many operational disruptions. The important thing is to manage them. To do that, investment should be made in technology. It is like insurance; you do it now and see the benefit when that moment comes. If you do not invest in technology and cut budgets during crises, you may contribute to the company's one-year budget, but it has a long-term negative impact on the business. Therefore, investment in technology should never be stopped. (**Participant 5**) Being able to do all the processes online is very important for airlines. Your flight may change, or there can be a flight-related disruption. What matters is to automate as much as possible digitally. (**Participan**t **5**)
Collaborative Partnerships	
	For resilience, good relations with the supply chain companies are vital. We offer training to those in the supply chain, such as handling company personnel, call centre personnel, etc. We teach them the company rules and expectations for the guest experience. (**Participant** 6)
	We still depend on GDSs and travel agencies worldwide to sell our tickets. During Covid-19, each country had different policies on travel restrictions. Good relations with worldwide travel agents helped us quickly access these restrictions and procedures as they know the region well. We started operations as soon as the restrictions were removed, and we could start operations immediately, while our competitors started a little later. We are always in contact and have good relations. (**Participan**t 7)